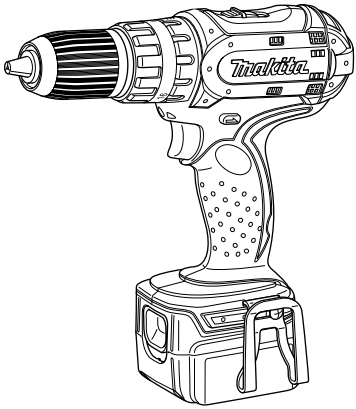
ENGLISH

INSTRUCTION MANUAL

# Cordless Percussion-Driver Drill

## BHP442
## BHP452

MakitaTool.ru



008357

⚠**WARNING:**
For your personal safety, READ and UNDERSTAND before using.
SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

ENGLISH

# SPECIFICATIONS

| Model | | BHP442 | BHP452 |
|---|---|---|---|
| Capacities | Concrete | 13 mm | |
| | Steel | 13 mm | |
| | Wood | 38 mm | |
| | Wood screw | 6 mm x 75 mm | 10 mm x 89 mm |
| | Machine screw | M6 | M6 |
| No load speed (min$^{-1}$) | High (2) | 0 - 1,400 | 0 - 1,500 |
| | Low (1) | 0 - 400 | 0 - 400 |
| Blows per minute | High (2) | 0 - 21,000 | 0 - 22,500 |
| | Low (1) | 0 - 6,000 | 0 - 6,000 |
| Overall length | | 215 mm | 215 mm |
| Net weight | | 1.7 kg (BL1430) | 1.8 kg (BL1830) |
| Rated voltage | | D.C. 14.4 V | D.C. 18 V |

• Due to our continuing programme of research and development, the specifications herein are subject to change without notice.

• Note: Specifications may differ from country to country.

END001-1

## Symbols

The following show the symbols used for the equipment. Be sure that you understand their meaning before use.

· Only for EU countries
Do not dispose of electric equipment together with household waste material! In observance of European Directive 2002/96/EC on waste electric and electronic equipment and its implementation in accordance with national law, electric equipment that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

ENE039-1

**Intended use**

The tool is intended for impact drilling in brick, concrete and stone as well as for drilling without impact in wood, metal, ceramic and plastic.

**For Model BHP442**

ENG101-1

**For European countries only**

**Noise**

The typical A-weighted noise level determined according to 60745-2-1:

Sound pressure level ($L_{pA}$) : 79 dB(A)
Uncertainty (K) : 3 dB(A)

The noise level under working may exceed 85 dB (A).

**Wear ear protection.**

ENG203-1

**Vibration**

The vibration total value (tri-axial vector sum) determined according to EN60745-2-1:

Work mode: impact drilling into concrete
Vibration emission ($a_{h,ID}$) : 6.5 m/s$^2$
Uncertainty (K) : 1.5 m/s$^2$

ENG302-1

Work mode : drilling into metal
Vibration emission ($a_{h,D}$) : 2.5 m/s$^2$ or less

**For Model BHP452**

ENG101-1

**For European countries only**

**Noise**

The typical A-weighted noise level determined according to 60745-2-1:

Sound pressure level ($L_{pA}$) : 79 dB(A)
Uncertainty (K) : 3 dB(A)

The noise level under working may exceed 85 dB (A).

**Wear ear protection.**

ENG203-1

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ENG302-1

Work mode : drilling into metal
Vibration emission ($a_{h,D}$) : 2.5 m/s$^2$ or less

ENH102-6

## EC-DECLARATION OF CONFORMITY

**Model; BHP442,BHP452**

We declare under our sole responsibility that this product is in compliance with the following standards of standardized documents;
EN60745, EN55014 in accordance with Council Directives, 2004/108/EC, 98/37/EC.

**CE2006**

000230

Tomoyasu Kato
Director

Responsible Manufacturer:
**Makita Corporation**
3-11-8, Sumiyoshi-cho, Anjo, Aichi, JAPAN
Authorized Representative in Europe:
**Makita International Europe Ltd.**
Michigan Drive, Tongwell, Milton Keynes, Bucks MK15 8JD, ENGLAND

GEA002-3

# GENERAL SAFETY RULES

**WARNING! Read all instructions.** Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury. The term "power tool" in all of the warnings listed below refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

# SAVE THESE INSTRUCTIONS.

**Work area safety**

1. **Keep work area clean and well lit.** Cluttered and dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
3. **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

**Electrical Safety**

4. **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
5. **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
6. **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
7. **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
8. **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.

**Personal Safety**

9. **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
10. **Use safety equipment. Always wear eye protection.** Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
11. **Avoid accidental starting. Ensure the switch is in the off-position before plugging in.** Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.
12. **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
13. **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
14. **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
15. **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of these devices can reduce dust-related hazards.

**Power tool use and care**

16. **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
17. **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
18. **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
19. **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.

20. **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
21. **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
22. **Use the power tool, accessories and tool bits etc. in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

**Battery tool use and care**

23. **Ensure the switch is in the off position before inserting battery pack.** Inserting the battery pack into power tools that have the switch on invites accidents.
24. **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
25. **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
26. **When battery pack is not in use, keep it away from other metal objects like paper clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another.** Shorting the battery terminals together may cause burns or a fire.
27. **Under abusive conditions, liquid may be ejected from the battery, avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.

**SERVICE**

28. **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.
29. **Follow instruction for lubricating and changing accessories.**
30. **Keep handles dry, clean and free from oil and grease.**

GEB011-2

# SPECIFIC SAFETY RULES

**DO NOT let comfort or familiarity with product (gained from repeated use) replace strict adherence to hammer drill safety rules. If you use this power tool unsafely or incorrectly, you can suffer serious personal injury.**

1. **Wear ear protectors with impact drills.** Exposure to noise can cause hearing loss.
2. **Hold power tools by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord.** Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator.
3. **Always be sure you have a firm footing. Be sure no one is below when using the tool in high locations.**
4. **Hold the tool firmly with both hands.**
5. **Keep hands away from rotating parts.**
6. **Do not leave the tool running. Operate the tool only when hand-held.**
7. **Do not touch the bit or the workpiece immediately after operation; they may be extremely hot and could burn your skin.**
8. **Some material contains chemicals which may be toxic. Take caution to prevent dust inhalation and skin contact. Follow material supplier safety data.**

# SAVE THESE INSTRUCTIONS.

**⚠WARNING:**

**MISUSE or failure to follow the safety rules stated in this instruction manual may cause serious personal injury.**

ENC007-2

# IMPORTANT SAFETY INSTRUCTIONS

# FOR BATTERY CARTRIDGE

1. **Before using battery cartridge, read all instructions and cautionary markings on (1) battery charger, (2) battery, and (3) product using battery.**
2. **Do not disassemble battery cartridge.**
3. **If operating time has become excessively shorter, stop operating immediately. It may result in a risk of overheating, possible burns and even an explosion.**
4. **If electrolyte gets into your eyes, rinse them out with clear water and seek medical attention right away. It may result in loss of your eyesight.**
5. **Do not short the battery cartridge:**
   (1) **Do not touch the terminals with any**

**conductive material.**

(2) **Avoid storing battery cartridge in a container with other metal objects such as nails, coins, etc.**

(3) **Do not expose battery cartridge to water or rain.**
**A battery short can cause a large current flow, overheating, possible burns and even a breakdown.**

6. **Do not store the tool and battery cartridge in locations where the temperature may reach or exceed 50˚C (122˚F).**
7. **Do not incinerate the battery cartridge even if it is severely damaged or is completely worn out. The battery cartridge can explode in a fire.**
8. **Be careful not to drop or strike battery.**

# SAVE THESE INSTRUCTIONS.

## Tips for maintaining maximum battery life

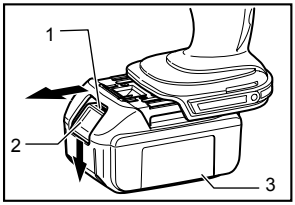
1. **Charge the battery cartridge before completely discharged.**
**Always stop tool operation and charge the battery cartridge when you notice less tool power.**
2. **Never recharge a fully charged battery cartridge.**
**Overcharging shortens the battery service life.**
3. **Charge the battery cartridge with room temperature at 10˚C - 40˚C (50˚F - 104˚F). Let a hot battery cartridge cool down before charging it.**

# FUNCTIONAL DESCRIPTION

**⚠CAUTION:**

- Always be sure that the tool is switched off and the battery cartridge is removed before adjusting or checking function on the tool.

## Installing or removing battery cartridge

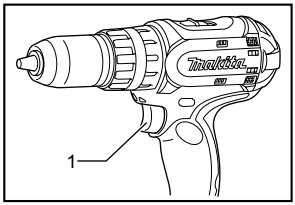



1. Red part
2. Button
3. Battery cartridge

007699

- Always switch off the tool before insertion or removal of the battery cartridge.
- To remove the battery cartridge, withdraw it from the tool while sliding the button on the side of the cartridge.
- To insert the battery cartridge, align the tongue on the battery cartridge with the groove in the housing and slip it into place. Always insert it all the way until it locks in place with a little click. If you can see the red part on the upper side of the button, it is not locked completely. Insert it fully until the red part cannot be seen. If not, it may accidentally fall out of the tool, causing injury to you or someone around you.
- Do not use force when inserting the battery cartridge. If the cartridge does not slide in easily, it is not being inserted correctly.

## Switch action




1. Switch trigger

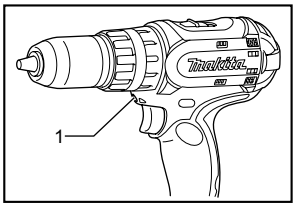
008348

**⚠CAUTION:**

- Before inserting the battery cartridge into the tool, always check to see that the switch trigger actuates properly and returns to the "OFF" position when released.

To start the tool, simply pull the switch trigger. Tool speed is increased by increasing pressure on the switch trigger. Release the switch trigger to stop.

## Lighting up the front lamp




1. Lamp

008353

**⚠CAUTION:**

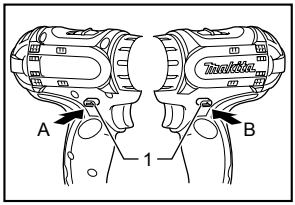
- Do not look in the light or see the source of light directly.

Pull the switch trigger to light up the lamp. The lamp keeps on lighting while the switch trigger is being pulled. The lamp goes out 10 -15 seconds after releasing the trigger.

**NOTE:**

- Use a dry cloth to wipe the dirt off the lens of lamp. Be careful not to scratch the lens of lamp, or it may lower the illumination.

## Reversing switch action




1. Reversing switch lever

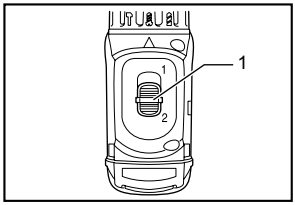
008349

This tool has a reversing switch to change the direction of rotation. Depress the reversing switch lever from the A side for clockwise rotation or from the B side for counterclockwise rotation.
When the reversing switch lever is in the neutral position, the switch trigger cannot be pulled.

**⚠CAUTION:**

- Always check the direction of rotation before operation.
- Use the reversing switch only after the tool comes to a complete stop. Changing the direction of rotation before the tool stops may damage the tool.
- When not operating the tool, always set the reversing switch lever to the neutral position.

## Speed change




1. Speed change lever

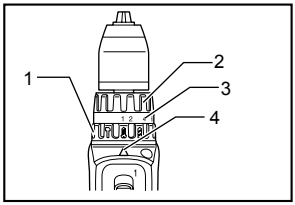
008350

To change the speed, first switch off the tool and then slide the speed change lever to the "2" side for high speed or "1" side for low speed. Be sure that the speed change lever is set to the correct position before operation. Use the right speed for your job.

**⚠CAUTION:**

- Always set the speed change lever fully to the correct position. If you operate the tool with the speed change lever positioned halfway between the "1" side and "2" side, the tool may be damaged.
- Do not use the speed change lever while the tool is running. The tool may be damaged.

## Selecting the action mode




1. Action mode changing ring
2. Adjusting ring
3. Graduation
4. Arrow

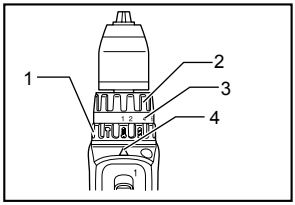
008351

This tool employs an action mode changing ring. Select one of the three modes suitable for your work needs by using this ring.
For rotation only, turn the ring so that the arrow on the tool body points toward the mark on the ring.
For rotation with hammering, turn the ring so that the arrow points toward the mark on the ring.
For rotation with clutch, turn the ring so that the arrow points toward the mark on the ring.

**⚠CAUTION:**

- Always set the ring correctly to your desired mode mark. If you operate the tool with the ring positioned halfway between the mode marks, the tool may be damaged.

## Adjusting the fastening torque




1. Action mode changing ring
2. Adjusting ring
3. Graduation
4. Arrow

008351

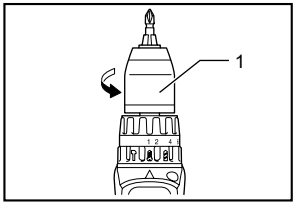
The fastening torque can be adjusted in 16 steps by turning the adjusting ring so that its graduations are aligned with the arrow on the tool body. The fastening torque is minimum when the number 1 is aligned with the arrow, and maximum when the number 16 is aligned with the arrow.
Before actual operation, drive a trial screw into your material or a piece of duplicate material to determine which torque level is required for a particular application.

# ASSEMBLY

⚠**CAUTION:**

- Always be sure that the tool is switched off and the battery cartridge is removed before carrying out any work on the tool.

### Installing or removing driver bit or drill bit

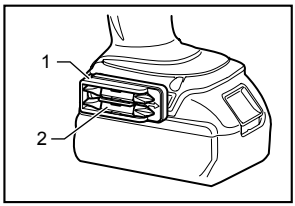



1. Sleeve

008352

Turn the sleeve counterclockwise to open the chuck jaws. Place the bit in the chuck as far as it will go. Turn the sleeve clockwise to tighten the chuck.
To remove the bit, turn the sleeve counterclockwise.

### Installing bit holder (accessory)

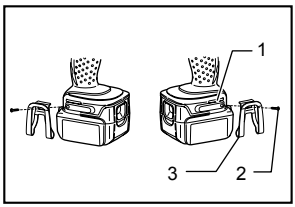



1. Bit holder
2. Bit

007700

Fit the bit holder into the protrusion at the tool foot on either right or left side and secure it with a screw.
When not using the driver bit, keep it in the bit holders. Bits 45 mm long can be kept there.

### Hook (Accessory)




1. Groove
2. Screw
3. Hook

008410

The hook is convenient for temporarily hanging the tool. This can be installed on either side of the tool.
To install the hook, insert it into a groove in the tool housing on either side and then secure it with a screw.
To remove, loosen the screw and then take it out.

# OPERATION

⚠**CAUTION:**

- Always insert the battery cartridge all the way until it locks in place. If you can see the red part on the upper side of the button, it is not locked completely. Insert it fully until the red part cannot be seen. If not, it may accidentally fall out of the tool, causing injury to you or someone around you.

Hold the tool firmly with one hand on the grip and the other hand on the bottom of the battery cartridge to control the twisting action.

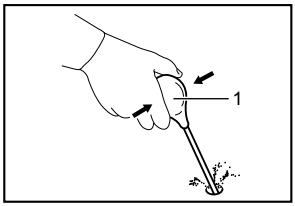
### Hammer drilling operation

⚠**CAUTION:**

- There is a tremendous and sudden twisting force exerted on the tool/bit at the time of hole break-through, when the hole becomes clogged with chips and particles, or when striking reinforcing rods embedded in the concrete.

First, turn the action mode changing ring so that the arrow on the tool body points to the marking. The adjusting ring can be aligned in any torque levels for this operation.
Be sure to use a tungsten-carbide tipped bit.
Position the bit at the desired location for the hole, then pull the switch trigger. Do not force the tool. Light pressure gives best results. Keep the tool in position and prevent it from slipping away from the hole.
Do not apply more pressure when the hole becomes clogged with chips or particles. Instead, run the tool at an idle, then remove the bit partially from the hole. By repeating this several times, the hole will be cleaned out and normal drilling may be resumed.

### Blow-out bulb (optional accessory)

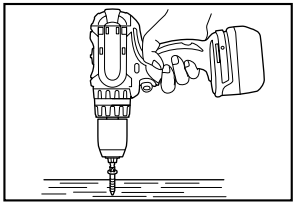



1. Blow-out bulb

002449

After drilling the hole, use the blow-out bulb to clean the dust out of the hole.

## Screwdriving operation



008354

First, turn the action mode changing ring so that the arrow on the tool body points to the marking. Adjust the adjusting ring to the proper torque level for your work. Then proceed as follows.
Place the point of the driver bit in the screw head and apply pressure to the tool. Start the tool slowly and then increase the speed gradually. Release the switch trigger as soon as the clutch cuts in.

**⚠CAUTION:**

- Make sure that the driver bit is inserted straight in the screw head, or the screw and/or bit may be damaged.

**NOTE:**

- When driving wood screws, predrill pilot holes to make driving easier and to prevent splitting of the workpiece. See the chart.

| Nominal diameter of wood screw (mm) | Recommended size of pilot hole (mm) |
|---|---|
| 3.1 | 2.0 - 2.2 |
| 3.5 | 2.2 - 2.5 |
| 3.8 | 2.5 - 2.8 |
| 4.5 | 2.9 - 3.2 |
| 4.8 | 3.1 - 3.4 |
| 5.1 | 3.3 - 3.6 |
| 5.5 | 3.7 - 3.9 |
| 5.8 | 4.0 - 4.2 |
| 6.1 | 4.2 - 4.4 |

006421

## Drilling operation

First, turn the adjusting ring so that the pointer points to the marking. Then proceed as follows.

**⚠CAUTION:**

- Pressing excessively on the tool will not speed up the drilling. In fact, this excessive pressure will only serve to damage the tip of your bit, decrease the tool performance and shorten the service life of the tool.
- There is a tremendous force exerted on the tool/bit at the time of hole break through. Hold the tool firmly and exert care when the bit begins to break through the workpiece.
- A stuck bit can be removed simply by setting the reversing switch to reverse rotation in order to back out. However, the tool may back out abruptly if you do not hold it firmly.
- Always secure small workpieces in a vise or similar hold-down device.
- If the tool is operated continuously until the battery cartridge has discharged, allow the tool to rest for 15 minutes before proceeding with a fresh battery.

**Drilling in wood**

When drilling in wood, the best results are obtained with wood drills equipped with a guide screw. The guide screw makes drilling easier by pulling the bit into the workpiece.

**Drilling in metal**

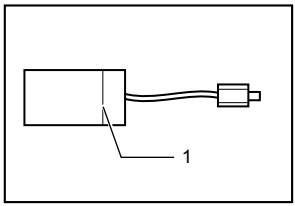
To prevent the bit from slipping when starting a hole, make an indentation with a center-punch and hammer at the point to be drilled. Place the point of the bit in the indentation and start drilling.
Use a cutting lubricant when drilling metals. The exceptions are iron and brass which should be drilled dry.

# MAINTENANCE

**⚠CAUTION:**

- Always be sure that the tool is switched off and the battery cartridge is removed before attempting to perform inspection or maintenance.

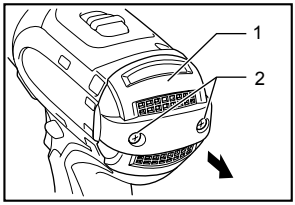
## Replacing carbon brushes




1. Limit mark

006258

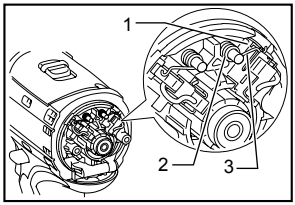
Replace when they wear down to the limit mark. Keep the carbon brushes clean and free to slip in the holders. Both carbon brushes should be replaced at the same time. Use only identical carbon brushes.
Use a screwdriver to remove two screws then remove the rear cover.




1. Rear cover
2. Screws

008355

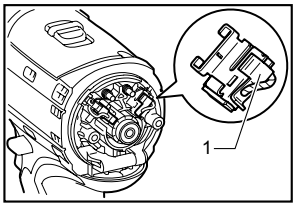
Raise the arm part of the spring and then place it in the recessed part of the housing with a slotted bit screwdriver of slender shaft or the like.




1. Recessed part
2. Spring
3. Arm

007428

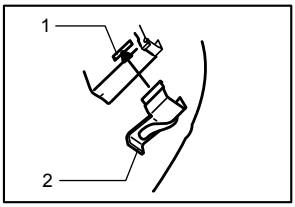
Use pliers to remove the carbon brush caps of the carbon brushes. Take out the worn carbon brushes, insert the new ones and replace the carbon brush caps in reverse.




1. Carbon brush cap

007429

Make sure that the carbon brush caps have fit into the holes in brush holders securely.




1. Hole
2. Carbon brush cap

006304

Reinstall the rear cover and tighten two screws securely. To maintain product SAFETY and RELIABILITY, repairs, any other maintenance or adjustment should be performed by Makita Authorized Service Centers, always using Makita replacement parts.

# ACCESSORIES

**⚠CAUTION:**

- These accessories or attachments are recommended for use with your Makita tool specified in this manual. The use of any other accessories or attachments might present a risk of injury to persons. Only use accessory or attachment for its stated purpose.

If you need any assistance for more details regarding these accessories, ask your local Makita Service Center.

- Drill bits
- Tungsten-carbide tipped hammer bit
- Phillips bit
- Slotted bit
- Socket bit
- Blow-out bulb
- Safety goggles
- Various type of Makita genuine batteries and chargers
- Hook
- Rubber pad assembly
- Wool bonnet
- Foam polishing pad

Makita Corporation Anjo, Aichi, Japan

884756-227